CLAIMS

What is claimed is:

1. A method for inserting Interval Markers in a data stream comprised of data blocks said method comprising:

a) storing data blocks in a Buffer having a predetermined number registers;

b) outputting said data blocks from said Buffer while counting the number of data blocks that have been stored in said registers; and

c) inserting Interval Markers between said data blocks at predetermined intervals within said data stream prior to outputting said data blocks, said predetermined intervals determined in accordance with the number of data blocks counted and a desired Marker interval.

2. The method of claim 1, wherein the number of said predetermined registers in said Buffer is optimized to include a sufficient number of registers to receive and output data blocks, and registers for Interval Marker insertion.

3. The method of claim 1 wherein said storing data blocks begins upon a request for data from an Initiator Device, said request including parameters which define the characteristics of said Interval Markers.

4. A method for inserting Interval Markers into a data stream consisting of data blocks, said data stream generated in response to a request from an Initiator Device, said method comprising the steps of:

a) establishing a set of parameters for said data stream upon a request from said Initiator Device, said parameters including a Block Count value, and a Marker Offset value indicating that Interval Markers are required at specified intervals within said data stream;

b) storing said data blocks in a Buffer having a predetermined number of registers;

c) initializing said Block Count value upon receiving said request from said Initiator Device, said Block Count value for indicating the number of data blocks within said data stream which have been read into said registers;

d) initializing said Marker Offset value upon receiving said request from said Initiator Device, said Marker Offset for indicating the next instance for insertion of an Interval Marker;

e) inserting Interval Markers between data blocks stored in said registers as specified by said parameters, and indicated by said Block Count value and said Marker Offset value;

f) outputting the contents of a portion said predetermined number of registers of said Buffer to generate said data stream, when said Block Count value indicates sufficient data is present in said Buffer.

5. The method of claim 4 wherein said Block Count value is initialized with a value of zero and is incremented to count data blocks while storing data blocks in said Buffer and is decremented as data blocks are read out of said Buffer.

6. The method of claim 4, wherein the number of said predetermined registers in said Buffer is optimized to include a sufficient number of registers to store input and output data blocks, as well as Interval Markers.

7. The method of claim 4 wherein said storing data blocks in said Buffer begins upon a request for data from an Initiator Device, said request including parameters which define the characteristics of said Interval Markers.

8. The method of claim 4 wherein said Buffer Count value is determined according to the relationship: BC = (BC + DBin), wherein at the start of a transfer of data from host memory, BC = 0.

9. The method of claim 4 wherein said Marker Offset value is initialized with a value of zero and wherein if data is read out of said Buffer, the value of said Buffer Count is

determined according to the relationship: BC (new) = (BC (old) - DBout), and the value of said Marker Offset is defined as MO (new) = (MO (old) – Dbout).

10. The method of claim 4 wherein upon insertion of an Interval Marker between data blocks, said Buffer Count value is determined according to the relationship: BC (new) = (BC(old) + ML) and the value of said Marker Offset is determined according to the relationship: MO (new) = (MO (old) + MI).

11. A method for inserting Interval Markers in a data stream consisting of data blocks, said data stream communicated between a storage device and a storage application, said method comprising the steps of:

a) establishing a connection between said storage device and said storage application, said connection being defined by a plurality of parameters, said parameters including the number of data blocks to be transmitted and the desired intervals between said Interval Markers in said data stream;

b) reading said data blocks from said storage device into a Buffer having a predetermined number of registers, said data blocks read into said registers in groups of data blocks, said registers for temporarily storing said groups of data blocks, wherein said Buffer includes sufficient registers for simultaneously storing at least first and second groups of data blocks as well as registers for storing said Interval Markers;

c) initializing a Block Count value at the beginning of said connection for counting said data blocks as they are read into said registers, said Block Count value being continuously updated to indicate how many registers in said Buffer contain valid data;

d) initializing a Marker Offset value at the beginning of said connection, said Marker Offset value being continuously updated to indicate the next location for insertion of an Interval Marker between said data blocks within said data stream;

e) inserting said Interval Markers between data blocks stored in said registers as indicated by said Block Count value and said Marker Offset value; and

f) reading said data blocks and said Interval Markers from said Buffer for transmitting said data blocks to said storage application to generate said data stream, when said Block Count value indicates there is sufficient data in said registers for transmission.

12. A system for inserting Interval Markers in a data stream, said system comprising:

a) a host memory device for storing data blocks;

b) a Buffer, coupled to said host memory device, for temporarily storing of data blocks read from said host memory device;

c) a Marker generator for inserting Interval Markers at predetermined intervals between data blocks stored in said Buffer, and

d) a data transmitter, coupled to said Buffer, for transmitting data in accordance with a data communication protocol.

13. A system for inserting Interval Markers in a data stream comprising data blocks, said system comprising:

a) a host memory device for storing data blocks;

b) a Buffer having a predetermined number of registers, coupled to said host memory device, for storing predetermined data blocks read from said host memory device;

c) a first counter for indicating the number of registers in said Buffer containing valid data blocks;

d) a second counter for indicating the next instance for insertion of an interval Marker with respect to said data blocks stored in said Buffer;

e) a data transmitter, coupled to said Buffer, for transmitting data blocks in accordance with a data communication protocol whenever said first counter indicates said Buffer contains sufficient data for transmission; and

f) a Marker insertion module for inserting Interval Markers at predetermined intervals between said data blocks stored in said Buffer as indicated by said second counter.